

AMENDMENTS TO THE CLAIMS

Claims 1-19 (Cancelled).

20. (Currently Amended) A method of producing a wiring board, comprising:

- forming a first rough surface having concavities therein on at least a portion of a transfer surface of a carrier base;
- forming a wiring transfer sheet by forming a wiring layer directly on the transfer surface of the carrier base without any intervening adhesive material so that the wiring layer directly contacts the transfer surface, the wiring layer being formed so that a portion of the wiring layer is located within the concavities of the first rough surface;
- transferring the wiring layer to a receiving surface of an electrically insulating substrate, said transferring comprising:
 - superposing the wiring transfer sheet onto the receiving surface of the substrate;
 - heating and pressurizing the wiring transfer sheet and the substrate so as to adhere the wiring layer of the wiring transfer sheet to the substrate, and so as to form a second rough surface on at least a portion of the receiving surface of the substrate, the second rough surface being complementary to the first rough surface; and
 - removing the carrier base of the wiring transfer sheet.

21. (Previously Presented) The method of claim 20, further comprising forming through-holes in a thickness direction of the substrate before said transferring of the wiring layer to the receiving surface of the substrate, and filling the through-holes with a conductive paste.

Claim 22 (Cancelled).

23. (Previously Presented) The method of claim 20, wherein said heating and pressurizing comprises forming the second rough surface including a plurality of convexities.

24. (Previously Presented) The method of claim 20, further comprising, after said superposing of the wiring transfer sheet onto the receiving surface of the substrate, superposing the substrate having the wiring transfer sheet superposed thereon onto a wiring board or a wiring board intermediate, and said heating and pressurizing further includes adhering the electrically insulating substrate to a surface of the wiring board or the wiring board intermediate by said heating and pressurizing.

25. (Previously Presented) The method of claim 24, further comprising repeating said forming of a first rough surface on at least a portion of a transfer surface of a carrier base, said forming of a wiring transfer sheet, and said transferring of the wiring layer to an electrically insulating substrate, so as to form a plurality of substrates each having a transferred wiring layer.

26. (Previously Presented) The method of claim 25, wherein each of the substrates contains a thermosetting resin which is uncured before said heating and pressurizing, initial repetitions of said heating and pressurizing comprise pre-curing the thermosetting resin contained in each substrate, and a final repetition of said heating and pressurizing comprises post-curing the thermosetting resin contained in all of the substrates.

27. (Previously Presented) The method of claim 25, wherein the substrates to which a wiring layer is transferred are superposed on both surfaces of the wiring board or the wiring board intermediate.

28. (Previously Presented) A method of producing a wiring board, comprising:
forming a wiring transfer sheet by forming a wiring layer directly on a transfer surface of a carrier base without any intervening adhesive material so that the wiring layer directly contacts the transfer surface;
transferring the wiring layer to a receiving surface of an electrically insulating substrate, said transferring comprising:

superposing the wiring transfer sheet onto the receiving surface of the substrate;

heating and pressurizing the wiring transfer sheet and the substrate so as to adhere the wiring layer of the wiring transfer sheet to the substrate, and so as to form a rough surface on the receiving surface of the substrate that is complementary to a rough surface on the transfer surface of the carrier base; and

removing the carrier base of the wiring transfer sheet.

29. (Currently Amended) The method of claim 28, wherein said heating and pressurizing comprises forming the ~~second~~ rough surface on the receiving surface of the substrate including a plurality of convexities.

30. (Previously Presented) The method of claim 28, further comprising, after said superposing of the wiring transfer sheet onto the receiving surface of the substrate, superposing the substrate having the wiring transfer sheet superposed thereon onto a surface of a wiring board or a wiring board intermediate, and said heating and pressurizing further includes adhering the substrate to the surface of the wiring board or the wiring board intermediate by said heating and pressurizing.

31. (Previously Presented) The method of claim 30, further comprising repeating said forming of a wiring transfer sheet, and said transferring of the wiring layer to an electrically insulating substrate, so as to form a plurality of substrates each having a transferred wiring layer.

32. (Previously Presented) The method of claim 31, wherein each of the substrates contains a thermosetting resin which is uncured before said heating and pressurization, initial repetitions of said heating and pressurizing comprise pre-curing the thermosetting resin contained in each substrate, and a final repetition of said heating and pressurizing comprises post-curing the thermosetting resin contained in all of the substrates.

33. (Previously Presented) The method of claim 31, wherein the substrates to which a wiring layer is transferred are superposed on both surfaces of the wiring board or the wiring board intermediate.

34. (Currently Amended) A method of producing a wiring board, comprising:
forming a first rough surface having concavities therein on at least a portion of a transfer surface of a carrier base;

forming a wiring transfer sheet by forming a wiring layer directly on the transfer surface of the carrier base without any intervening adhesive material so that the wiring layer directly contacts the transfer surface, the wiring layer being formed so that a portion of the wiring layer is located within the concavities of the first rough surface;

superposing an electrically insulating substrate on the transfer surface of the wiring transfer sheet;

superposing, through the substrate, the wiring transfer sheet on a wiring board or a wiring board intermediate;

heating and pressurizing to adhere the wiring layer of the wiring transfer sheet to a receiving surface of the substrate, to form a second rough surface on at least a portion of the receiving surface of the substrate, the second rough surface being complementary to the first rough surface, and to adhere the substrate to the wiring board or the wiring board intermediate; and

removing the carrier base of the wiring transfer sheet.

35. (Previously Presented) The method of claim 34, further comprising forming through-holes in a thickness direction of the substrate to expose the wiring layer of the wiring transfer sheet superposed on the substrate, and filling the through-holes with a conductive paste.

Claim 36 (Cancelled).

37. (Previously Presented) The method of claim 34, wherein said heating and pressurizing to form the second rough surface comprises forming a plurality of convexities on the receiving surface of the substrate.

38. (Previously Presented) The method of claim 34, further comprising repeating said forming of a first rough surface, said forming of a wiring transfer sheet, said superposing of an electrically insulating substrate on a transfer surface of the wiring transfer sheet, said superposing of the wiring transfer sheet on a wiring board or a wiring board intermediate, said heating and pressurizing, and said removing of the carrier base, so as to form a plurality of substrates, each having a transferred wiring layer, on at least one wiring board or wiring board intermediate.

39. (Previously Presented) The method of claim 38, wherein each of the substrates contains a thermosetting resin which is uncured before said heating and pressurizing, initial repetitions of said heating and pressurizing comprise pre-curing the thermosetting resin contained in each substrate, and a final repetition of said heating and pressurizing comprises post-curing the thermosetting resin contained in all of the substrates.

40. (Previously Presented) The method of claim 38, wherein said repeatedly superposing, through a substrate, a wiring transfer sheet on a wiring board or a wiring board intermediate comprises superposing wiring transfer sheets on both surfaces of the wiring board or the wiring board intermediate through the corresponding substrates.

41. (Currently Amended) A method of producing a wiring board with a component disposed in an electrically insulating substrate, comprising:

superposing an electrically insulating substrate on a wiring board or a wiring board intermediate;

forming a laminate by adhering the substrate to the wiring board or the wiring board intermediate by heating and pressurizing;

forming a space within the laminate for receiving a component therein;

forming a first rough surface having concavities therein on at least a portion of a transfer surface of a carrier base;

forming a wiring transfer sheet by forming a wiring layer directly on the transfer surface of the carrier base without any intervening adhesive material so that the wiring layer directly contacts the transfer surface, the wiring layer being formed so that a portion of the wiring layer is located within the concavities of the first rough surface;

mounting the component on the wiring layer of the wiring transfer sheet;

superposing the wiring transfer sheet on a receiving surface of the laminate so as to position the component in the space formed in the laminate;

heating and pressurizing to adhere the wiring layer of the wiring transfer sheet to the substrate of the laminate, and to form a second rough surface on at least a portion of the receiving surface of the substrate, the second rough surface being complementary to the first rough surface;

filling a void around the component with resin contained in the laminate; and
removing the carrier base of the wiring transfer sheet.

42. (Currently Amended) The method of claim ~~40~~41, further comprising forming through-holes in a thickness direction of the substrate before said forming of the laminate, and filling the through-holes with a conductive paste.

Claim 43 (Cancelled).

44. (Currently Amended) The method of claim ~~40~~41, wherein said superposing of an electrically insulating substrate on a wiring board or a wiring board intermediate comprises superposing a substrate containing an uncured thermosetting resin, said forming a laminate comprising heating and pressurizing to pre-cure the thermosetting resin of the substrate.

45. (Currently Amended) The method of claim ~~40~~41, wherein said superposing of an electrically insulating substrate on a wiring board or a wiring board intermediate

comprises superposing the substrate to a wiring board intermediate including a plurality of electrically insulating substrates each containing an uncured thermosetting resin.

46. (Currently Amended) A method of producing a wiring board with a component disposed in an electrically insulating substrate, comprising:

forming a wiring board or a wiring board intermediate by:

forming a first rough surface having concavities therein on at least a portion of a transfer surface of a carrier base;

forming a first wiring transfer sheet by forming a wiring layer directly on the transfer surface of the carrier base without any intervening adhesive material so that the wiring layer directly contacts the transfer surface, the wiring layer being formed so that a portion of the wiring layer is located within the concavities of the first rough surface;

superposing the first wiring transfer sheet on a receiving surface of a first electrically insulating substrate;

heating and pressurizing to adhere the wiring layer of the first wiring transfer sheet to the first substrate, and so as to form a second rough surface on at least a portion of the receiving surface of the first substrate, the second rough surface being complementary to the first rough surface of the first wiring transfer sheet;

removing the carrier base of the first wiring transfer sheet; and

after removing the carrier base, disposing a second electrically insulating substrate on the first substrate having the wiring layer adhered thereto;

forming a laminate by adhering the second substrate to the first substrate by heating and pressurizing;

forming a space within the laminate for receiving a component;

mounting the component on a wiring layer of a second wiring transfer sheet;

superposing the second wiring transfer sheet on a receiving surface of the second substrate of the laminate so as to position the component in the space;

heating and pressurizing to adhere the wiring layer of the second wiring transfer sheet to the second substrate of the laminate, and so as to form a second rough surface on

at least a portion of the receiving surface of the second substrate, the second rough surface being complementary to a first rough surface of the second wiring transfer sheet; filling a void around the component with resin contained in the laminate; and removing the carrier base of the second wiring transfer sheet.

47. (Previously Presented) The method of claim 46, further comprising forming through-holes in a thickness direction of both the first substrate and the second substrate before said forming of the laminate, and filling the through-holes with a conductive paste.

Claim 48 (Cancelled).

49. (Previously Presented) The method of claim 46, wherein said superposing the first wiring transfer sheet on a receiving surface of a first electrically insulating substrate comprises superposing the first wiring transfer sheet on a first electrically insulating substrate containing an uncured thermosetting resin, and said heating and pressurizing to adhere the wiring layer of the first wiring transfer sheet to the first substrate comprises heating and pressurizing to pre-cure the thermosetting resin of the first substrate.

50. (Previously Presented) The method of claim 46, wherein said disposing a second electrically insulating substrate on the first substrate comprises disposing a second substrate containing an uncured thermosetting resin on the first substrate, and said forming a laminate by heating and pressurizing comprises heating and pressurizing to pre-cure the thermosetting resin of the second substrate.

51. (Previously Presented) The method of claim 46, wherein said forming of a wiring board or a wiring board intermediate comprises forming a first wiring board or a first wiring board intermediate, further comprising superposing the first substrate having the first wiring transfer sheet superposed thereon, onto a receiving surface of a second wiring board or a second wiring board intermediate, and adhering the first substrate to the receiving surface of the second wiring board or the second wiring board intermediate.

52. (Previously Presented) The method of claim 51, further comprising repeating said forming a first wiring transfer sheet, said superposing the first wiring transfer sheet on a receiving surface of a first electrically insulating substrate, said heating and pressurizing to adhere the wiring layer of the first wiring transfer sheet to the first substrate, and said removing the carrier base of the first wiring transfer sheet to form a plurality of first substrates each having a transferred wiring layer.